

REMARKS

The claims remain 50 to 95.

The independent claims 50, 55, and 58 are amended to recite that the photocatalytic layers are “each consisting of a photocatalytic material”, basis for which is to be found in the disclosure taken as a whole and in the language “thin-film layers of photocatalytic material” as in paragraph [0012], page 4 of the specification, and note “thin-film layers of photocatalytic materials consisting of titanium dioxide” in paragraph [0033], page 7. There is no new issue since “made of”, previously presented, was clearly used in that sense. Other claims are similarly amended as appropriate.

Claims 55, 58, 70 and 73 stand allowed.

Claim 53 is amended to conform with the disclosure in paragraph [0015] at page 4 of the specification.

Claim 64 is amended to correct an obvious typographic error.

Claims 57, 59, 60, 643, 64, 72, 75 and 78-94 stand withdrawn from consideration.

However, it would appear that Claims 85 and 88 should also be allowed since they depend from allowed Claims 55 and 58, respectively.

THE CLAIMS REJECTIONS

Reconsideration and withdrawal of the rejection of Claims 50-54, 56, 61, 62, 65-69, 71, 76, 77 and 95 under 35 U.S.C. § 103(a) as being unpatentable over Tabata et al. (5,407,738) in view of Kumazawa et al. (6,248,436) are requested.

The reasons are as follows:

The rationale for the rejection is as follows:

It would have been obvious to one of ordinary skill in the art at the time of the invention disperse Kumazawa's anatase type titanium dioxide minute granular substances in Tabata's transparent material in order to enhance the vividness of the color produced.

One of ordinary skill in the art would have been motivated to add the titanium dioxide granules to the transparent material of Tabata because the granules have a higher refractive index than the transparent material which produces a color regardless of the direction of the incidence light (*Kumazawa*, col. 4, lines 53-62) and improve the vividness of the color (*Kumazawa* col. 1, lines 38-40).

However such a modification would not meet Applicants' claims which required that the photocatalytic layer be each "made of" a photocatalytic material now reworded in more legalese language to recite "each consisting of a photocatalytic material". A layer of non-photocatalytic material containing embedded particles can hardly be said to be "made up" of the particles or in more legalese language "consisting of the particles".

As previously pointed out, Applicants at page 2, in the paragraphs [0004], [0005] and [0006] point to the deficiencies of particulate or pigment type photocatalytic materials. The subject claims have called for "thin-film layers of photocatalytic material", (emphasized now by the "consisting of" recitation), which in the context of the disclosure, and see also Claim 52 and original Claims 1 and 3, is not suggested by films pigmented with granular material as disclosed in Kumazawa et al., the possible photocatalytic properties of some of which are not employed or recognized by them.

Please note that Kumazawa et al indicate at col. 4, line 41, the granular material "may be set within the range of 0.1 to 10 weight percents". Volume per cent will be even lower, since the granular materials are denser than the disclosed high molecular resins containing them. The Kumazawa et al structures can hardly be said to be made up of or to be consisting of the granular material.

The use of granular material to increase scattering efficiency is not suggested by the Tabata et al. disclosure. Moreover, where more than one layer is present in the Kumazawa et al. structure, they are laminated alternatively, please see col. 8, line 4 of the patent. This is not the type of structure envisioned by Tabata et al. It would appear that the rationale for the combination is not based upon the referenced disclosures.

In short, Kumazawa et al. are not interested in the photocatalytic effect of their anatase titanium dioxide pigments and incorporation for optical effects of such pigments into the Tabata et al. structure would not yield these films made up of or consisting of photocatalytic material. Kumazawa et al. employ minor amounts of such pigments. In fact, as pointed out on page 2 over to page 3 of the subject invention, such pigments could only have a localized photocatalytic effect and indeed could cause deterioration of their organic carriers, a phenomenon well known as chalking in the paint industry.

For the reasons given, favorable reconsideration of the rejected claims is solicited.

Respectfully submitted,

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